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GCE

GCE Music Technology (6MT03) Paper 01 Portfolio 2

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General Introduction

Overall impressions

This is the first year of examination for the new specification. The practical tasks build on the previous specification, requiring candidates to use a broadly similar set of skills and techniques, and have been modified to reflect advances in the technology and its application.

It is clear that many centres are keeping up to date with equipment advances, and making sure they have at least fairly recent software, with a range of plug-in instruments and processors, often including additional ones to those included in the software package. With the available choice and quality of freeware plug-ins there is no reason for any centre to be without a range of production tools. A small minority of centres were using entry level software, which can be a compromise, but if carefully set-up with additional plug-ins the work can be carried out to a suitable standard.

Recording set-ups show that centres are generally well equipped, with a range of dynamic and condenser mics, both small and large diaphragm. Some centres are starting to consider room acoustics more, with the use of acoustic panels, reflection shields and other treatment becoming more common.

Controlled conditions do not seem to have had any negative effect on the standard of work produced, which was similar to that seen previously – see further details in the discussion of individual tasks.

Task 3A: Sequenced Integrated Performance

Headlines

- Missing instrumental parts were common
- Rhythm was frequently rigid and mechanical
- Musical subtlety and detail often lacking, showing basic sequencing skills
- Integration of audio often lacking care in balance, EQ, effects use and dynamics
- Capture of audio generally handled quite well

The responses to this were generally felt to be somewhat better than the similar task on the old specification, paper 3 task 3 Integrated Recording. Possibly without the need to first sequence the vocal part, there was better attention on the complete task of integrating a live recording of the vocal. However there were often still examples of weak sequencing techniques, and though capture of audio was usually done quite well, it was compromised by poor mix and production work.

The distribution of responses to the two set works, Superfreak by Rick James and Heart of Glass by Blondie, were roughly equal. In some centres every candidate did the same piece, while others did a mixture. The majority of Superfreak submissions used a male vocalist, with only a very small amount using a female, whilst with Heart of Glass it was more common to see the vocal taken on by a male. In neither case was there a detrimental effect to the outcome compared to submissions that went with the same gender as the original song. Available performers at a centre clearly play an important role in making choices, and while both songs presented some difficult sections for vocalists, it was felt that most submissions managed to capture a creditable vocal performance.

Backing vocals were the most common choice of additional live parts, where any were included

at all. In some cases candidates had exceeded the number of permitted live tracks (max. 3 including main vocal) and the additional tracks were treated as missing parts and not considered for marking. A surprisingly small number of entries chose to record the guitar part in either piece. The sax solo in Superfreak was often recorded live, though the majority sequenced this.

A couple of factors that could have improved this area were often ignored – one was consideration of the key of the piece and if the singer had the range to cope. It is acceptable to change the key to suit a vocalist. Another is getting the correct lyrics for the piece, which in the case of Heart of Glass seemed to present problems quite often.

Some centres used the incorrect version of Heart of Glass for their stimulus. It was a mistake that was easily made, as the details for the given stimulus were to use the version from a compilation titled 'Atomic – the Best of Blondie' (the original 7" single mix). Quite a few centres worked from a version that starts with a drum machine loop from the CD called 'The Best of Blondie'. Examiners treated either in the same way, as they were still equivalent tasks, but it should be noted that in future exam series, choosing the wrong stimulus could have a negative effect on the marking – if for example a stripped down remix was used then it could not be seen as equivalent due to fewer musical parts. The catalogue number of the CD from which the stimulus is taken will always be given, so there can be no excuse for choosing the wrong piece.

No candidates submitted the MC Hammer song 'Can't Touch This' which uses a loop from Superfreak. It would not have been possible to mark this.

The approach in a small number or cases was to treat the task almost as an arrangement, with re-interpretation of musical parts and even substitution of parts not on the original. As stated on the portfolio document, this is not the requirement – the intention should be to produce an accurate, faithful reproduction of the original in terms of pitch, rhythm, delivery and style.

Quality of responses in each of the mark components

Pitch and Rhythm

By far the biggest problem here was missing parts. It was common for one or more parts to be omitted completely. Typically this would be backing vocals (both pieces); guitar part, flexatone and vibraslap in Superfreak; second guitar, sweep synth, keyboards on the bridge (particularly sustained organ chords) in Heart of Glass. Sometimes additional parts were added that did not exist on the original. On a few rare occasions, the vocal line had been sequenced and was left in under the recorded vocal.

Common errors in Superfreak were incorrect piano chords; omitting the change in the bass part on the chorus (before the breakdown); wrong chords on the keyboard in the bridge; incorrect backing vocals (where sequenced). In Heart of Glass the main guitar riff was often incorrect; sometimes the bass part was completely wrong, disco octaves throughout being a typical mistake here; it was very common for the kick drum part to be incorrect and the change between verse and bridge omitted; chords and bass pitches on the bridge were sometimes wrong on the turnaround at the end.

The awkward timing of the breakdown section in Superfreak was usually handled well, as was the change of time signature in the Blondie piece. Variations in hi hat pattern in Heart of Glass were attempted with a degree of success in most cases. The Sax solo in Superfreak was usually quite accurate (where sequenced).

Timbre

It was rare to see work where all the timbres were close to the original with evidence of careful

editing. Bass and guitar were usually fairly close, as well as drums though the snare/clap/fingersnap combination of Superfreak was rarely done well, and the open hi hats of Heart of Glass often caused problems.

Synths & keyboards caused a large degree of issues. The piano in Superfreak should have been an acoustic piano, with a somewhat dull tone, but many interpreted this as an electric piano or even sometimes an organ. The other synths were often closer but again without being totally accurate. The arpeggiated synth in Heart of Glass was often incorrect, quite a few selected a guitar sound for this. The correct layering of organ and string synth on the bridge was very rare, and the organ timbre was often unrealistic.

Backing vocals showed a wide variety of responses where present and sequenced. There were some creative attempts at the squeaky BVs in Superfreak, and the scalic figure towards the end was often successfully recognised as one of the few occasions where vocal aahs are a suitable choice of timbre. Sequenced backing vocal parts were rarely included in Heart of Glass, but the simple nature of the part led them to be done quite well where attempted.

Missing parts – as with pitch and rhythm – have an impact on the marks in this category.

Balance/Pan

It was common for there to be several problems in this category, mainly around balance of parts and integration of the live vocal(s). Often there are one or two parts that dominate the mix and swamp the rest of the music – culprits are often bass or kick drum, with guitar and occasional keyboard parts also. Careful listening to a mix on studio monitors some time after it is completed should pick up these problems, and the opportunity to re-mix pieces should be built in to time management.

The integration of the vocal depends on many factors, and a suitable balance will be hard to achieve if the music has other balance problems, if there are missing parts or if the dynamic is not suitably shaped.

Pan was usually handled fairly well, in particular the obvious settings in Heart of Glass were picked out and recreated well.

Dynamics

Many candidates managed to create some sense of contrast similar to the original songs. Changes between verse, bridges and/or breakdown sections usually showed a similar lift or drop in dynamic. Where there were missing parts or serious balance issues this was often contributory to poor outcomes in this category.

Other dynamic shaping involving individual parts rarely showed any great attention to detail. Backing vocals and saxophone (Superfreak) where sequenced often would have benefited from some shaping using controllers or envelopes.

Also assessed here were management of top/tail of mix and fade. In common with other tasks, there are frequent problems in this area – cut start or end, or poorly managed fade are problems that can be simply fixed and should be noticed when checking mixes.

Articulation and Phrasing

This was often given some decent attention – velocity shaping of hi hats, bass lines, guitar lines and keyboard lines was often appropriate if lacking real subtlety. Note lengths were usually broadly accurate in the majority of parts. Where candidates fell down and missed out on higher marks was in more detailed aspects – slides in bass and guitar were present in both pieces and

often omitted completely. Similarly for backing vocals where sequenced. The sax solo in Superfreak where sequenced usually contained at least some slides, not always handled skilfully.

Style and Creativity

In this component examiners looked at the use of reverb and effects, plus other skills used to shape the details of the performance such as applying filter changes to the arpeggiated synth part in Heart of Glass, and finding a solution to sequencing the flexatone in Superfreak. Reverb was often applied fairly well across the live parts and the instrumental sequenced parts, and in the better work it was suitably chosen to be close to the original in both tonal quality and amount used. At the lower end there was little or no reverb used on the vocals, or unsuitable types or amounts. Since many candidates did not address the arp synth filtering (HoG) or missed out the flexatone they failed to attract marks here.

Capture of Live Audio

In common with capture in multi-track recording, the basic choice and use of microphones was usually handled quite well. However there were also common problems with slight drifting on or off mic, sometimes causing plosives and/or sibilance, which should be picked up at the recording stage and re-recorded. Any lack of clarity will stand out prominently in vocal parts so quality control must be rigorous.

EQ and dynamic management were also addressed here, with frequent problems occurring particularly with EQ. Dull or harsh EQ was common in too many submissions.

It was noticeable that a lot of centres did not list studio monitors in their gear list for this task, instead listing headphones. While clearly it is necessary to carry out a lot of the work on headphones at individual workstations, is of major importance that the mix stages are carried out using studio monitors, or that frequent reference is made during the process of mixing.

Task 3B: Multi-track Recording

Headlines

- Often the best response of the three tasks
- Some really high quality recordings are being produced, which is a credit to the delivery and management of the course in those centres
- Capture of instruments usually handled well
- Mix and production aspects tended to be less well executed than capture
- The is an increasing tendency for massive over-compression and driving of levels beyond clipping
- Some poor choices are being made to accommodate the acoustic instruments/percussion requirements, including modification of the stimulus for no good reason

The multi-track recording was often the most successful of the three tasks, and reflected the improvements that have been made in recent years with equipping music tech facilities and making sure experienced practitioners are involved in teaching music recording and production techniques.

The majority of centres understood and embraced the intentions of the requirement for four acoustic instruments. A lot of the most successful work used Soul or Funk/Pop songs for the stimulus with brass and percussion as the acoustic instruments. Some less suitable approaches included adding bongos/congas and tambourine/shakers to rock classics which was generally

unsuccessful, as it caused issues in blending the unfamiliar parts, and they often seemed to be treated as an afterthought with mediocre capture and management. Submissions that included strings as acoustic instruments often encountered problems – capture was often unfocused and treatment in the mix did little to improve the situation.

Quality of responses in each of the mark components

Mic placement and handling of DI sources was often managed well or at least competently, and very little work was completely poor in this area, continuing the trend seen in recent years for selecting appropriate mics for the job and taking care over placement. Drum overheads continue to be a problem, and centres are advised to think about the placement of the kit and acoustic environment, because in lively untreated spaces it is difficult to capture a focused image. Vocals also sometimes required more attention – it is such a crucial part of the recording that any drifting on/off mic or proximity will be very noticeable.

Noise and distortion was present in too many recordings. Extraneous off-mic noise that could easily be removed by editing or gating, poor edits at start and end, and poorly managed fades all showed a lack of care that gave rise to problems that could have been simply solved. Even if a re-recording of a noisy guitar part is necessary, this is part of the discernment that is required in music production and should be within the scope of the ability of candidates and the time available – better practice is to avoid hitting the record button until a clean signal has been acquired.

Also in this category a worrying trend is emerging for clipping master levels, probably due to almost everyone now mixing in the box and careless management of gain structure, which is in some ways harder to get visual feedback on than when using a mixing desk, and also heavy-handed use of limiters on the master bus – if the summed signal is already peaking beyond 0dB before it reaches a mix bus processor, the distortion will still be present even if it is limited below 0dB. There is no problem at all with leaving 3dB of headroom.

The following categories relate to the mixing and production of the piece and were generally less well handled than the capture:

EQ often displayed problems. Typically the overall distribution of frequencies was unsuitable due to exaggeration of EQ on several or most of the parts. The outcomes tended to be dull, harsh or suffering from overloaded bass frequencies. The number of candidates who did not list studio monitors in their log book might indicate that much mixing is being done on headphones, which is likely to lead to poor EQ decisions. The better work showed candidates taking full advantage of the range of plug-in EQs available and applying accepted practice to achieve a balanced and clear response across the whole frequency range.

Dynamics processing often gave rise to significant problems. The most common of these by far was extreme settings, leading to squashed and lifeless dynamics on individual parts – typically snares and bass drums but also sometimes vocals. There is also a tendency to use compressors or limiters on the stereo bus, that has been noticed in recent years and seems if anything to be increasing. Whilst this is potentially useful, and is standard practice for many engineers, it is commonly misjudged by candidates and some very severe over-compression was frequently found, leading to pumping and ducking. It would seem to imply that there is a lack of careful listening, and perhaps candidates are simply loading up a preset and thinking that is all that's required. Some good practice was in evidence where candidates had clearly worked carefully to recognise how to set suitable amounts of compression, and had listened in detail to the outcome, making adjustments as necessary.

Effects use also tended to be erratic. Very few pieces of work managed to establish a suitable basic reverb field with appropriate settings and decent levels on the necessary tracks. Common problems were significant parts that were too dry, and less frequently swamping of parts. Very

few submissions made use of delay as an effect despite it being common in all eras of music production. The best work was often found on electric guitar, where suitable use of reverb and delays was common. Other factors impact on this - it is difficult to establish suitable effects levels where there are EQ and balance problems, and severe compression also warps the placement of effects.

Balance and blend tended to show slightly better practice, with many candidates managing to produce at least fairly effective outcomes. It was still common to find some instruments buried or more often one or two instruments too dominant – typically this would be guitar, kick drum or bass. It was pleasing to see backing vocals and ensemble brass parts well blended in many cases. As mentioned above, another area that was less successful was placing percussion instruments in the mix where they did not exist in the original and had been added only to fulfil the task requirements. Many times they were isolated and it is safe to assume that if they are not on the original stimulus, there is a good reason for this. It should be noted that tuning and rhythmic ensemble problems have a significant impact in creating suitable blends. Part of the role of producer/engineer is to ensure quality control of performances as well as technical aspects of the recording.

Panning was normally done fairly well, though problems still occurred such as very wide settings leaving a hollow centre, or a narrow mix with little spread. Drum images were sometimes unpleasantly skewed, and occasionally strange decisions were made with lead vocals completely on one side. Again, other factors will impact here – if the balance is poor it is very difficult to create a well crafted stereo field.

Task 3C: Composing Using Music Technology

Headlines

- Generally good control of compositional elements showing understanding of style and the ability to develop ideas
- Some very skilled work which managed to creatively exploit a range of sound design and manipulation and combine it with imaginative, stylistic composition
- Conversely, many candidates ignored the expectation to explore sound design as an element of their work
- Problems with music production seen on the other tasks were also often prevalent – severe over-compression, distorted master, crude EQ and poor balance

The Composing using Technology task follows on from the previous specification, with the requirements being broadly similar but with no need to produce a score of the work.

Overall the standard of the work here was often at least competent, showing suitable control of musical elements with some development, and a fair consideration and response to the needs of the brief. The main area of difficulty seems to be around integrating the technology into the composition. It is expected that a different approach is taken here to the other two tasks at A2, with sound design and manipulation forming a central part of the work. A multi-track recording or integrated sequence do not fulfil this requirement.

It should also be noted that this is not an arrangement task, and 'sampling' that extends to a finished work that is substantially a re-mix of another artist's piece, or combines predominantly pre-programmed third party loops, will attract very few marks.

At the top end there was some excellent work, that showed imagination and a sense of completeness, with creative development of timbres using a wide range of manipulation techniques, and a considered and successful approach to the demands of the brief. At the lower

end there was some work that was basic in terms of control of musical elements and was disjointed and undeveloped.

Common difficulties where marks were lost – apart from the lack of sound design skills as mentioned – were in creating a clean and clear final mix. Too many suffered from poor balance, EQ, dynamics problems (particularly over-compression as evidenced in other tasks) and clipping of master bus. Very few submissions achieved maximum marks for quality of recorded submission.

The second and third briefs were the most popular, with the 'Obama' brief being chosen by slightly more candidates than the 'Alone' option. The first brief, 'Livin' the Dream' was chosen by relatively few candidates, certainly not more than 5%.

Responses to the Briefs

Livin' the Dream

Candidates who chose this brief usually managed to make reasonable use of themes and sometimes were able to place them in different contexts, and managed to create a range of moods and diverse styles to fit the different scenes. There was some imaginative use of sound design to reflect tuning guitars, conversations and sessions in the studio, phone calls and pastiche of artists referred to. Often the approach taken was guitar based rock, with the better submissions showing some diversity and as mentioned, taking the opportunity to incorporate sound design.

Problem areas included making the edits at the end of each section – many were clearly too long and were cut or faded clumsily, indicating poor understanding of the basic needs of music production, and questioning whether proper referencing of mixes was taking place.

Alone

Most candidates approached this as a song writing exercise, and there were a number of very well crafted results with strong melodic and harmonic ideas, good use of texture and development throughout the piece giving a strong form. It was also this approach that most often ignored the need for incorporating creative technology use, realising the song with standard recording or sequenced plus live parts techniques. Opportunities need to be taken to develop the palette of sounds – there are a huge range of vocal processing techniques such as lo-fi EQ, unusual ambiences, delays & modulation effects, vocoder, autotune, and sampling techniques like stuttering, gapping/glitching, detune, time-stretch. Synthesis, filtering and creative effects use can be employed in any styles.

A lot of candidates chose the different approach of using a narration of the text, and the best work showed some very imaginative thinking. Vocal processing of the type mentioned above was often used, with varying degrees of success, and some submissions created very interesting atmospheres by careful choice of delivery and use of different voices. In the better work, the timing of the narration was closely linked to the movement of the music. There was a limited number of submissions that extended this to using rap, but some good practice was seen when this approach was taken.

The narrations were usually accompanied by much more experimental, electronic and ambient music, which often incorporated elements of synthesis and sound design, but it was noticed that a large number of candidates simply choose a palette of atmospheric synth and drum sounds from the wide range of plug-in instruments available and did not apply any further manipulation or development. In these cases no credit can be given for manipulation of sounds, as the process is no different from using a standard timbre from any sound source.

President Obama

By necessity this piece included a degree of sampling or audio manipulation as a requirement of the brief, and the most basic task was to select, edit and place the samples in the context of a piece of music. In terms of the technical skills shown here, many samples were poor quality – note that YouTube has very low audio quality and samples are better sourced elsewhere – and the editing was careless with clicks and glitches caused by poor slicing.

Many submissions attempted to build a storyline but only the best managed to imaginatively combine samples from a variety of speeches and news clips to create a compelling narrative that avoided the obvious. There was an over-reliance on the acceptance speech, often prefaced by Martin Luther King's 'I have a dream'.

Not enough attention was placed on the timing of the speech in relation to the movement of the music – there were ample opportunities to take parts of Obama's speeches and create rhythmic figures, his delivery is very punchy and accented in certain places, and editing can be used to make slight adjustments needed to fit this in with the music.

Many candidates attempted various sample manipulation and processing techniques to create unique timbres, and probably the most success in this area was seen with this brief. In the best work, there was a great range of varied vocal timbres presented that were placed effectively within the composition, and kept the interest by introducing new and unexpected twists as the piece developed.

Log Books

These were usually filled out with a reasonable degree of care and attention to detail. A pleasing number of centres had clearly encouraged candidates to learn how to express the important facts and figures about how they had completed their work, which has the knock-on effect of helping their use of written language and technical terms in the written paper.

Some candidates provided scant information, which can sometimes be to their disadvantage. The information in the log book is used to confirm or clarify the evidence of listening. If the examiner is uncertain which techniques have been used, then the appropriate credit may not be given in the marking. In extreme cases where there is no information about recording techniques and mix settings for tasks 3A and 3B, or no description of sound design techniques used in task 3C, the examiner will usually contact the centre to request this. Marking without this information can lead to confusion over whether the specification requirements have been met, particularly in relation to track count and use of acoustic instruments in task 3B.

The log book is planned so it has enough space for candidates to provide all the necessary information examiners need to complete the marking. There may be cases where additional sheets need to be included, for example if extensive synthesis or sample manipulation has been done and there is not enough space, and providing photos of recording set-ups can be good practice as long as they are not generic photos but actually of the sessions the candidate has managed. The provision of reams of extra pages full of screen shots is unnecessary – it is far better for candidates and examiners alike to have a simple, concise description or list of relevant information in the spaces provided. As mentioned above, candidates will benefit from distilling the relevant details from their mix set-ups or sound design work and presenting it using their own language.

Statistics

Unit 3 Portfolio 2

Grade	Max. Mark	A*	A	B	C	D	E
Raw boundary mark	120	92	84	76	68	60	52
Uniform boundary mark	120	108	96	84	72	60	48

A* is only used in conversion from raw to uniform marks. It is not a published unit grade.

Notes

Maximum Mark (Raw): the mark corresponding to the sum total of the marks shown on the mark scheme.

Boundary mark:
The minimum mark required by a candidate to qualify for a given grade.

Grade boundaries may vary from year to year and from subject to subject, depending on the demands of the question paper.

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